



**UNIVERSITI KUALA LUMPUR**

ASSESSMENT BRIEF – GROUP PROJECT

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| **COURSE DETAILS** | |
| **CAMPUS** | MIIT |
| **COURSE NAME** | OBJECT-ORIENTED SYSTEMS ANALYSIS AND DESIGN |
| **COURSE CODE** | IEB20703 |
| **COURSE LEADER** | JAWAHIR BINTI CHE MUSTAPHA @ YUSUF, PhD |
| **LECTURER** | JAWAHIR BINTI CHE MUSTAPHA @ YUSUF, PhD |
| **YEAR/SEMESTER** | OCTOBER 2024 |

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| **ASSESSMENT DETAILS** | |
| **TITLE/NAME** | PROJECT |
| **WEIGHT** | 30% |
| **DISTRIBUTION DATE/DEADLINE** | Week 4 / Refer Deliverables |
| **COURSE OUTCOME/S** | CLO 2:  Evaluate the information gathered to define user/system requirements. (C4, PLO7)  CLO 3:  Build design of system models by using UML to develop a small/medium- scale information system project based on an object-oriented system analysis and design approach. (C5, PLO10) |
| **PROJECT OVERVIEW/ INSTRUCTION** | Students will work in groups of up to four members to create a comprehensive design project for a proposed information system. The project will be developed in three phases—planning, system analysis, and system design. The project will end at the elaboration phase, without requiring implementation. |
| **DELIVERABLES** | 1. Project Planning. (Deadline: End of Week 5) 2. Documentation for Analysis. (Deadline: End of Week 8) 3. Documentation for Design. (Deadline: End of Week 11) |

**Step 1 - Review Project Theme Ideas (Appendix A)**

Each group must choose a project theme from the list below or propose a custom theme that must be approved by the instructor. Ensure that your chosen theme aligns with the course objectives and provides enough depth for analysis and design.

**Step 2: Select and Confirm Your Project Theme**

* **Group Decision**: Hold a group discussion to select a project theme from the list or propose a new one.
* **Approval for Custom Themes**: If choosing a custom theme, submit a brief overview to the instructor for approval.

**Step 3: Conduct Background Research**

* **Research Existing Solutions**: Investigate current systems related to your chosen theme to understand common functionalities and user expectations.
* **Identify Gaps**: Highlight potential improvements or unique features your system can offer.

**Step 4: Initial Brainstorming Session**

* **Group Discussion**: Collaborate with your group to outline initial ideas, identify key components, and list any anticipated challenges.
* **User Roles**: Ensure that your project supports at least two types of users (e.g., admin and end-user).

**Step 5: Prepare for the Planning Phase**

* **Compile Findings**: Summarize your research, chosen features, and unique elements in preparation for the planning phase.
* **Assign Preliminary Tasks**: Allocate initial responsibilities to group members to prepare for detailed planning.

Once you have completed the initial phase of selecting your project theme and conducting preliminary research, follow the steps outlined below to move forward through the detailed **Planning (Phase 1)**, **System Analysis (Phase 2)**, and **System Design (Phase 3)** phases:

**Phase 1: Planning (Due Week 5)**

1. **Develop the Project Charter**:
   * Write a comprehensive overview of the project, including the purpose, objectives, and scope.
   * List stakeholders and their roles, and outline any constraints that could impact the project.
2. **Conduct a Feasibility Study**:
   * Analyze the technical, economic, and operational feasibility of your project.
   * Summarize findings to determine if the project can proceed as planned.
3. **Create an Initial Project Schedule**:
   * Use a Gantt chart or a project timeline to break down milestones.
   * Assign preliminary responsibilities to each team member and define task dependencies.
4. **Assign Team Roles and Establish a Communication Plan**:
   * Detail each member’s specific role and responsibilities.
   * Outline the group’s communication strategy (e.g., weekly meetings, project management tools).
5. **Submit the Planning Document**:
   * Compile all findings and submit a well-organized document in PDF format by **Week 5**.

**Phase 2: System Analysis (Due Week 8)**

1. **Develop Use Case Diagrams and Descriptions**:
   * Create use case diagrams that capture system interactions and functionality.
   * Provide a brief description for each use case, detailing the flow of interactions.
2. **Create a Requirements Document**:
   * List all functional and non-functional requirements clearly and concisely.
   * Ensure the document reflects the needs of the system and users.
3. **Draft an Initial Class Diagram**:
   * Design a conceptual class diagram that shows primary classes, attributes, and relationships.
   * Ensure consistency with the use case and requirements documents.
4. **Create Activity Diagrams**:
   * Develop activity diagrams for key use cases to represent the workflow and user interactions.
5. **Submit the System Analysis Document**:
   * Compile and submit the system analysis deliverables by **Week 8**.

**Phase 3: System Design (Due Week 11)**

1. **Refine the Class Diagram**:
   * Update the initial class diagram to include detailed attributes and methods.
   * Ensure all relationships and associations are accurately represented.
2. **Create Sequence Diagrams**:
   * Develop sequence diagrams for at least two major use cases.
   * Highlight object interactions, method calls, and data flow.
3. **Design the Database (ERD)**:
   * Create an ERD that details entities, attributes, primary and foreign keys, and relationships.
   * Include a data dictionary for clarity on table structures and data types.
4. **Develop the System Architecture Design**:
   * Provide a high-level overview of the system architecture (e.g., client-server, n-tier).
   * Justify the choice of technology stack and explain key architectural decisions.
5. **Create Interface Mockups**:
   * Design mockups for key user interfaces and annotate them with UX considerations.
   * Include a simple flow diagram to show user navigation between screens.
6. **Submit the System Design Document**:
   * Compile all design documents into a single submission by **Week 11**.

**Final Steps and Review:**

* **Team Review Session**: Before submitting each phase, conduct a peer review to ensure completeness and coherence.
* **Instructor Feedback**: After each phase submission, review feedback provided by the instructor and make any necessary adjustments.
* **Prepare for Final Submission**: Ensure all three phases (Planning, System Analysis, System Design) are finalized and meet the project requirements for submission by the due dates.

**Note:** The project stops at the elaboration phase, meaning implementation is not required. This allows you to focus on mastering system design principles without the added complexity of coding or development.

Please refer to Appendix B for detailed marking rubrics.

# APPENDIX A

# Project Theme Ideas (To Be Defined Before Planning, Analysis, and Design Phases)

The project themes help guide you in choosing a system relevant to real-world scenarios, ensuring you gain practical insights into Object-Oriented System Analysis and Design (OOSAD). Below are suggested themes that you can select or customize for your group projects:

1. **Online Appointment Scheduling System for a Clinic:**
   * **Description:** Design a system that allows patients to book, cancel, and reschedule appointments with medical practitioners. It should include user authentication, appointment notifications, and an admin interface for managing schedules.
   * **Core Features:** User registration, appointment booking and management, email/SMS reminders, doctor availability display, and appointment history tracking.
2. **E-commerce Platform for a Local Artisan Market:**
   * **Description:** Create an e-commerce platform where local artisans can list and sell their products. The system should support user and seller profiles, shopping cart functionality, payment processing, and order tracking.
   * **Core Features:** Product catalog, shopping cart, payment gateway integration, user reviews, and order management.
3. **Library Management System with User and Admin Portals:**
   * **Description:** Develop a system that automates library operations such as book borrowing, returns, and user management. It should include user and admin dashboards, search functionalities, and notifications for due dates.
   * **Core Features:** User account management, book catalog and search, borrowing and return tracking, overdue notifications, and inventory management.
4. **Event Ticketing System for Campus Events:**
   * **Description:** Design a system where students and staff can browse, book, and manage tickets for university events. The system should have features for event organizers to create and manage events and for users to book and check-in.
   * **Core Features:** Event browsing, ticket booking, QR code generation for check-in, event notifications, and seat allocation (optional).
5. **Student Attendance and Performance Tracking System:**
   * **Description:** Create a system that allows teachers to track attendance and monitor student performance. The system should offer analytics for students' participation and academic progress.
   * **Core Features:** Attendance tracking, performance metrics, student and teacher dashboards, report generation, and notifications for low attendance.

# APPENDIX B

# Marking Rubrics

**Phase 1: Planning (Due Week 5)**

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| --- | --- | --- | --- | --- | --- |
| Criteria | Excellent (90-100%) | Good (75-89%) | Satisfactory (60-74%) | Needs Improvement (<60%) | Weight |
| Project Charter | Comprehensive, clear, and well-structured. All elements included and well-articulated. | Clear and structured with minor omissions. Most elements are well-articulated. | Basic structure with some elements missing or unclear. | Lacks structure; significant elements are missing or poorly defined. | 20% |
| Feasibility Study | Detailed and thorough analysis covering all aspects (technical, economic, operational). | Good analysis with minor gaps in detail or clarity. | Basic analysis; some important aspects are missing. | Minimal or incomplete analysis with significant gaps. | 20% |
| Project Schedule | Clear, detailed, and realistic timeline with well-defined milestones. | Clear timeline but lacks some detail or minor inaccuracies. | Basic timeline with missing milestones or unrealistic elements. | Poorly defined or unrealistic schedule. | 20% |
| Team Roles & Responsibilities | Clearly defined roles and responsibilities; well-distributed workload. | Defined roles with minor ambiguities; fair workload distribution. | Vague roles; uneven workload distribution. | Lacks clarity and balance in roles; significant ambiguities. | 20% |
| Documentation Quality | Professionally presented, error-free, and well-organized. | Minor errors but overall well-organized and presented. | Contains several errors; basic organization. | Poorly presented, disorganized, with numerous errors. | 20% |

**Phase 2: System Analysis (Due Week 8)**

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| Criteria | Excellent (90-100%) | Good (75-89%) | Satisfactory (60-74%) | Needs Improvement (<60%) | Weight |
| Use Case Diagrams | Comprehensive, accurate, and clearly presented with all interactions well-defined. | Mostly accurate with minor errors; interactions are clear. | Basic use cases with some missing details or inaccuracies. | Incomplete or poorly constructed use cases. | 15% |
| Requirements Document | Clear, detailed, and comprehensive list of functional and non-functional requirements. | Good detail with minor gaps; requirements are clear. | Basic requirements list; some aspects missing or unclear. | Incomplete or lacks clarity; many missing requirements. | 20% |
| Initial Class Diagram | Detailed and accurate with appropriate classes, attributes, and relationships. | Accurate with minor omissions or errors. | Basic diagram with missing or unclear elements. | Poorly defined with significant errors. | 15% |
| Activity Diagrams | Well-structured, detailed, and accurate representation of workflows. | Good representation with minor issues in structure or detail. | Basic diagrams with some missing or unclear parts. | Incomplete or inaccurate diagrams with poor detail. | 20% |
| Documentation Quality | Clear, well-organized, and error-free. | Minor errors but well-organized. | Contains several errors; basic organization. | Poorly presented, disorganized, or numerous errors. | 15% |
| Peer Collaboration Evidence | Strong evidence of equal contribution and collaboration. | Good evidence with minor issues. | Some evidence; uneven collaboration. | Little to no evidence of collaboration. | 15% |

**Phase 3: System Design (Due Week 11)**

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| Criteria | Excellent (90-100%) | Good (75-89%) | Satisfactory (60-74%) | Needs Improvement (<60%) | Weight |
| Refined Class Diagram | Detailed, accurate, with complete attributes and methods; relationships well-defined. | Mostly accurate with minor details missing. | Basic structure with some missing or unclear relationships. | Incomplete or incorrect relationships and details. | 15% |
| Sequence Diagrams | Comprehensive and accurate with logical flow; interactions well-depicted. | Good representation with minor issues. | Basic diagram with some missing or unclear interactions. | Incomplete or inaccurate with poor representation. | 20% |
| Database Design (ERD) | Detailed and normalized to 3NF; complete data dictionary provided. | Well-structured with minor normalization or detail issues. | Basic structure; some normalization or detail gaps. | Poorly structured, lacking detail or normalization. | 25% |
| System Architecture Design | Clear, detailed architecture diagram with justified technology choices. | Good diagram with minor details missing or insufficient justification. | Basic diagram with some missing details or weak justification. | Incomplete, unclear, or lacking justification. | 20% |
| Interface Mockups | Professional, user-friendly, and detailed mockups with clear annotations. | Good mockups with minor improvements needed. | Basic mockups; some missing elements or annotations. | Incomplete or poorly constructed mockups. | 15% |
| Documentation Quality | Clear, organized, error-free documentation. | Minor errors but well-structured. | Contains several errors; basic organization. | Disorganized or contains numerous errors. | 5% |

**Overall Marking Considerations:**

* **Timely Submission:** 5 points (from 30) will be deducted for late submissions.
* **Originality and Creativity:** Bonus points (up to 5%) may be awarded for innovative ideas and unique features.
* **Peer Review and Collaboration:** Bonus points (up to 5%) may be awarded for team members' collaboration and equal participation through peer assessments.